EBERLINE SERVICES

0064999

September 23, 2004

Mr. Steve Trent
Fluor Hanford Inc.
825 Jadwin Avenue
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R4-08-104-7065, SDG H2671

Dear Mr. Trent:

Enclosed is the data report for one solid sample designated under SAF No F04-015 received at Eberline Services on August 12, 2004. The sample was analyzed according to the accompanying chain-of-custody documents.

Please call if you have any questions concerning this report.

Sincerely,

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

RECEIVED
SEP 29 2004
2004
9/29/04

RECEIVED
MAY 17 2005
EDMC

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Fluor Hanford Inc. (FH) Sample Delivery Group H2671 was composed of one solid (soil) sample designated under SAF No. F04-015 with a Project Designation of: 200-MW-1 Characterization Sampling and Analysis - Soil.

The sample was received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist.

2.0 ANALYSIS NOTES

2.1 Tritium Analyses

No problems were encountered during the course of the analyses.

2.2 Technetium-99 Analyses

No problems were encountered during the course of the analyses.

2.3 Iodine-129 Analyses

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analyses

No problems were encountered during the course of the analyses.

2.5 Total Uranium Analyses

No problems were encountered during the course of the analyses.

2.6 Isotopic Uranium Analyses

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analyses

No problems were encountered during the course of the analyses.

2.8 Americium-241 Analyses

No problems were encountered during the course of the analyses.

2.9 Gamma Spectroscopy Analyses

No problems were encountered during the course of the analyses.

Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Mel Mann

Melissa C. Mannion
Senior Program Manager

9/23/4

Date

EBERLINE SERVICES / RICHMOND
SAMPLE DELIVERY GROUP H2671

SDG	7065
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_H2671

SUMMARY DATA SECTION

TABLE OF CONTENTS

J. Gutierrez
Prepared by

Melissa Mannion
Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

SDG 7065
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

SDG 7065
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

LAB SAMPLE SUMMARY

SDG 7065
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG H2671

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R408104-01	B197F0	216-A-4 Crib	SOLID		F04-015	F03-018-079	07/21/04 10:54
R408104-02	Lab Control Sample		SOLID		F04-015		
R408104-03	Method Blank		SOLID		F04-015		
R408104-04	Duplicate (R408104-01)	216-A-4 Crib	SOLID		F04-015		07/21/04 10:54

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

QC SUMMARY

SDG 7065
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG H2671

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7065	F03-018-079	B197F0	SOLID	84.3	73.51 g		08/12/04	22	R408104-01	7065-001
		Method Blank	SOLID						R408104-03	7065-003
		Lab Control Sample	SOLID						R408104-02	7065-002
		Duplicate (R408104-01)	SOLID	84.3	73.51 g		08/12/04	22	R408104-04	7065-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

PREP BATCH SUMMARY

SDG 7065
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG H2671

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Soil	7095-118	5.0	1			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	7095-118	5.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Soil	7095-118	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Soil	7095-118	10.0	1			1	1	1/1		
TC	SOLID	Technetium 99 in Soil	7095-118	10.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7095-118	15.0	1			1	1	1/1		
I	SOLID	Iodine 129 in Soil	7095-118	10.0	1			1	1	1/1		
Kinetic Phosphorimetry (KPA)												
U_T	SOLID	Uranium, Total in Soil	7095-118	9.0	1			1	1	1/1		
Liquid Scintillation Counting												
H	SOLID	Tritium in Soil	7095-118	10.0	1			1	1	1/1		

Duplicates and Matrix Spikes are those with original (Client) sample in this Sample Delivery Group.
Blank and LCS planchets are those in the same preparation batch as some Client, Duplicate or Spike sample.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

LAB WORK SUMMARY

SDG 7065
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG H2671

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R408104-01	B197F0			7065-001	AM		09/10/04	09/23/04	MWT	Americium 241 in Soil
07/21/04	216-A-4 Crib		SOLID	7065-001	GAM		09/21/04	09/23/04	MWT	Gamma Scan
08/12/04	F03-018-079	F04-015		7065-001	H		09/05/04	09/23/04	MWT	Tritium in Soil
				7065-001	I		09/07/04	09/23/04	MWT	Iodine 129 in Soil
				7065-001	PU		09/09/04	09/23/04	MWT	Plutonium, Isotopic in Solids
				7065-001	SR		09/04/04	09/23/04	MWT	Total Strontium in Soil
				7065-001	TC		09/09/04	09/23/04	MWT	Technetium 99 in Soil
				7065-001	U		09/08/04	09/23/04	MWT	Uranium, Isotopic in Soil
				7065-001	U_T		09/13/04	09/23/04	MWT	Uranium, Total in Soil
R408104-02	Lab Control Sample			7065-002	AM		09/09/04	09/23/04	MWT	Americium 241 in Soil
			SOLID	7065-002	GAM		09/15/04	09/23/04	MWT	Gamma Scan
		F04-015		7065-002	H		09/05/04	09/23/04	MWT	Tritium in Soil
				7065-002	I		09/08/04	09/23/04	MWT	Iodine 129 in Soil
				7065-002	PU		09/09/04	09/23/04	MWT	Plutonium, Isotopic in Solids
				7065-002	SR		09/04/04	09/23/04	MWT	Total Strontium in Soil
				7065-002	TC		09/04/04	09/23/04	MWT	Technetium 99 in Soil
				7065-002	U		09/08/04	09/23/04	MWT	Uranium, Isotopic in Soil
				7065-002	U_T		09/13/04	09/23/04	MWT	Uranium, Total in Soil
R408104-03	Method Blank			7065-003	AM		09/09/04	09/23/04	MWT	Americium 241 in Soil
			SOLID	7065-003	GAM		09/16/04	09/23/04	MWT	Gamma Scan
		F04-015		7065-003	H		09/05/04	09/23/04	MWT	Tritium in Soil
				7065-003	I		09/08/04	09/23/04	MWT	Iodine 129 in Soil
				7065-003	PU		09/10/04	09/23/04	MWT	Plutonium, Isotopic in Solids
				7065-003	SR		09/04/04	09/23/04	MWT	Total Strontium in Soil
				7065-003	TC		09/04/04	09/23/04	MWT	Technetium 99 in Soil
				7065-003	U		09/08/04	09/23/04	MWT	Uranium, Isotopic in Soil
				7065-003	U_T		09/13/04	09/23/04	MWT	Uranium, Total in Soil
R408104-04	Duplicate (R408104-01)			7065-004	AM		09/09/04	09/23/04	MWT	Americium 241 in Soil
07/21/04	216-A-4 Crib		SOLID	7065-004	GAM		09/16/04	09/23/04	MWT	Gamma Scan
08/12/04		F04-015		7065-004	H		09/05/04	09/23/04	MWT	Tritium in Soil
				7065-004	I		09/07/04	09/23/04	MWT	Iodine 129 in Soil
				7065-004	PU		09/10/04	09/23/04	MWT	Plutonium, Isotopic in Solids
				7065-004	SR		09/04/04	09/23/04	MWT	Total Strontium in Soil
				7065-004	TC		09/09/04	09/23/04	MWT	Technetium 99 in Soil
				7065-004	U		09/08/04	09/23/04	MWT	Uranium, Isotopic in Soil
				7065-004	U_T		09/13/04	09/23/04	MWT	Uranium, Total in Soil

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

SDG 7065
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
AM	F04-015	Americium 241 in Soil	AMCMISO_IE_PLATE_AEA	1			1	1	1	4
GAM	F04-015	Gamma Scan	GAMMA_GS	1			1	1	1	4
H	F04-015	Tritium in Soil	TRITIUM_COX_LSC	1			1	1	1	4
I	F04-015	Iodine 129 in Soil	I129_SEP_LEPS_GS	1			1	1	1	4
PU	F04-015	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	1			1	1	1	4
SR	F04-015	Total Strontium in Soil	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TC	F04-015	Technetium 99 in Soil	TC99_TR_SEP_LSC	1			1	1	1	4
U	F04-015	Uranium, Isotopic in Soil	UISO_PLATE_AEA	1			1	1	1	4
U_T	F04-015	Uranium, Total in Soil	UTOT_KPA	1			1	1	1	4
TOTALS				9			9	9	9	36

0 0 0 0 0 0 1 1

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

7065-003 **Method Blank**

METHOD BLANK

SDG 7065 Client/Case no Hanford SDG H2671
Contact Melissa C. Mannion Contract No. 630

Lab sample id R408104-03 Client sample id Method Blank
Dept sample id 7065-003 Material/Matrix SOLID
SAF No F04-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-0.154	1.5	2.5	400	U	H
Total Strontium	SR-RAD	0.825	110	180	1.0	U	SR
Technetium 99	14133-76-7	7.60	3.7	8.6	15	U	TC
Total Uranium (ug/g)	7440-61-1	0.160	0.088	0.18	1.0	U	U_T
Uranium 233/234	U-233/234	0	24	90	1.0	U	U
Uranium 235	15117-96-1	0	29	110	1.0	U	U
Uranium 238	U-238	11.8	24	90	1.0	U	U
Plutonium 238	13981-16-3	2.13	13	24	1.0	U	PU
Plutonium 239/240	PU-239/240	6.38	8.5	16	1.0	U	PU
Americium 241	14596-10-2	34.6	69	130	1.0	U	AM
Iodine 129	15046-84-1	0.470	11	25	2.0	U	I
Potassium 40	13966-00-2	U		10		U	GAM
Cobalt 60	10198-40-0	U		0.72	0.050	U	GAM
Cesium 137	10045-97-3	U		0.57	0.10	U	GAM
Radium 226	13982-63-3	U		1.1	0.10	U	GAM
Radium 228	15262-20-1	U		2.6	0.20	U	GAM
Europium 152	14683-23-9	U		1.4	0.10	U	GAM
Europium 154	15585-10-1	U		2.0	0.10	U	GAM
Europium 155	14391-16-3	U		1.1	0.10	U	GAM
Thorium 228	14274-82-9	U		0.73		U	GAM
Thorium 232	TH-232	U		2.6		U	GAM
Uranium 235	15117-96-1	U		1.7		U	GAM
Uranium 238	U-238	U		70		U	GAM
Americium 241	14596-10-2	U		1.4		U	GAM

200 MW-1 Characterization Sampling

QC-BLANK 48691

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

7065-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7065
Contact Melissa C. Mannion

Client/Case no Hanford SDG H2671
Contract No. 630

Lab sample id R408104-02
Dept sample id 7065-002

Client sample id Lab Control Sample
Material/Matrix SOLID
SAF No F04-015

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Tritium	557	7.7	2.3	400		H	586	23	95	84-116	80-120
Total Strontium	11800	440	160	1.0		SR	11200	450	105	82-118	80-120
Technetium 99	2740	58	12	15		TC	2320	93	118	81-119	80-120
Total Uranium (ug/g)	1960	230	1.8	1.0		U_T	1810	72	108	75-125	80-120
Uranium 233/234	4590	530	280	1.0		U	4830	190	95	81-119	80-120
Uranium 235	3660	460	85	1.0		U	3920	160	93	80-120	80-120
Uranium 238	4660	530	270	1.0		U	5240	210	89	82-118	80-120
Plutonium 238	12700	1500	150	1.0		PU	13300	530	95	81-119	80-120
Plutonium 239/240	13200	1600	150	1.0		PU	14500	580	91	81-119	80-120
Americium 241	9910	1100	130	1.0		AM	10400	420	95	82-118	80-120
Iodine 129	4050	44	45	2.0		I	4020	160	101	84-116	80-120
Cobalt 60	101	3.4	1.5	0.050		GAM	104	4.2	97	77-123	80-120
Cesium 137	102	2.7	1.8	0.10		GAM	101	4.0	101	76-124	80-120

200 MW-1 Characterization Sampling

QC-LCS 48690

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

7065-004 B197F0

DUPLICATE

SDG 7065 Client/Case no Hanford SDG H2671

Contact Melissa C. Mannion Contract No. 630

DUPLICATE	ORIGINAL	
Lab sample id R408104-04	Lab sample id R408104-01	Client sample id B197F0
Dept sample id 7065-004	Dept sample id 7065-001	Location/Matrix 216-A-4 Crib SOLID
	Received 08/12/04	Collected/Weight 07/21/04 10:54 73.51 g
% solids 84.3	% solids 84.3	Custody/SAF No F03-018-079 F04-015

ANALYTE	DUPLICATE pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ORIGINAL pCi/g	2σ ERR (COUNT)	MDA pCi/g	QUALI-FIERS	RPD %	3σ PROT TOT LIMIT
Tritium	1.58	1.5	2.5	400	U	H	-0.801	1.4	2.4	U	-	
Total Strontium	3830000	51000	1600	1.0		SR	3860000	42000	1200		1	21
Technetium 99	7.49	5.0	13	15	U	TC	5.61	4.4	10	U	-	
Total Uranium (ug/g)	2000	240	1.8	1.0		U_T	1970	240	1.8		2	32
Uranium 233/234	544	150	80	1.0		U	478	140	75		13	61
Uranium 235	25.3	25	97	1.0	U	U	35.4	47	90	U	-	
Uranium 238	743	170	80	1.0		U	683	160	75		8	50
Plutonium 238	304	47	20	1.0		PU	209	120	150		37	76
Plutonium 239/240	20600	670	14	1.0		PU	21400	2300	150		4	20
Americium 241	4340	630	130	1.0		AM	3810	200	23		13	27
Iodine 129	-2.34	14	31	2.0	U	I	3.28	18	40	U	-	
Potassium 40	U		20		U	GAM	U		29	U	-	
Cobalt 60	17.1	2.4	2.8	0.050		GAM	14.3	3.6	4.6		18	52
Cesium 137	70300	40	16	0.10		GAM	63600	70	38		10	32
Radium 226	U		18	0.10	U	GAM	U		33	U	-	
Radium 228	U		21	0.20	U	GAM	U		33	U	-	
Europium 152	U		40	0.10	U	GAM	U		71	U	-	
Europium 154	191	12	12	0.10		GAM	179	20	20		6	37
Europium 155	U		51	0.10	U	GAM	U		85	U	-	
Thorium 228	U		19		U	GAM	U		33	U	-	
Thorium 232	U		21		U	GAM	U		33	U	-	
Uranium 235	U		61		U	GAM	U		100	U	-	
Uranium 238	U		630		U	GAM	U		980	U	-	
Americium 241	U		2100		U	GAM	U		2000	U	-	

200 MW-1 Characterization Sampling

QC-DUP#1 48692

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 09/23/04

EBERLINE SERVICES / RICHMOND

SAMPLE DELIVERY GROUP H2671

7065-001 B197F0

DATA SHEET

SDG	7065	Client/Case no	Hanford SDG H2671
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R408104-01	Client sample id	B197F0
Dept sample id	7065-001	Location/Matrix	216-A-4 Crib SOLID
Received	08/12/04	Collected/Weight	07/21/04 10:54 73.51 g
% solids	84.3	Custody/SAF No	F03-018-079 F04-015

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALIFIERS	TEST
Tritium	10028-17-8	-0.801	1.4	2.4	400	U	H
Total Strontium	SR-RAD	3860000	42000	1200	1.0		SR
Technetium 99	14133-76-7	5.61	4.4	10	15	U	TC
Total Uranium (ug/g)	7440-61-1	1970	240	1.8	1.0		U_T
Uranium 233/234	U-233/234	478	140	75	1.0		U
Uranium 235	15117-96-1	35.4	47	90	1.0	U	U
Uranium 238	U-238	683	160	75	1.0		U
Plutonium 238	13981-16-3	209	120	150	1.0		PU
Plutonium 239/240	PU-239/240	21400	2300	150	1.0		PU
Americium 241	14596-10-2	3810	200	23	1.0		AM
Iodine 129	15046-84-1	3.28	18	40	2.0	U	I
Potassium 40	13966-00-2	U		29		U	GAM
Cobalt 60	10198-40-0	14.3	3.6	4.6	0.050		GAM
Cesium 137	10045-97-3	63600	70	38	0.10		GAM
Radium 226	13982-63-3	U		33	0.10	U	GAM
Radium 228	15262-20-1	U		33	0.20	U	GAM
Europium 152	14683-23-9	U		71	0.10	U	GAM
Europium 154	15585-10-1	179	20	20	0.10		GAM
Europium 155	14391-16-3	U		85	0.10	U	GAM
Thorium 228	14274-82-9	U		33		U	GAM
Thorium 232	TH-232	U		33		U	GAM
Uranium 235	15117-96-1	U		100		U	GAM
Uranium 238	U-238	U		980		U	GAM
Americium 241	14596-10-2	U		2000		U	GAM

200 MW-1 Characterization Sampling

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test AM Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241
Preparation batch 7095-118					
R408104-01			7065-001	B197F0	3810
R408104-02			7065-002	LCS (QC ID=48690)	ok
R408104-03			7065-003	BLK (QC ID=48691)	34.6 U
R408104-04			7065-004	Duplicate (R408104-01)	ok
Nominal values and limits from method				RDLs (pCi/g)	1.0
200 MW-1 Characterization Sampling					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 5.0 %		Reference Lab Notebook 7095 pg. 118											
R408104-01			B197F0	23	0.0010			74		994			51	09/09/04	09/10	SS-058
R408104-02			LCS (QC ID=48690)	130	0.0010			76		102				09/09/04	09/09	SS-031
R408104-03			BLK (QC ID=48691)	130	0.0010			73		103				09/09/04	09/09	SS-032
R408104-04			Duplicate (R408104-01) (QC ID=48692)	130	0.0010			75		103			50	09/09/04	09/09	SS-033
Nominal values and limits from method				1.0	0.0010			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	CP-061	Determination of Moisture Content in Solid Samples rev 1
	CP-070	Soil Dissolution, < 1.0g Aliquot, rev 5
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 100 ± 110
YIELD 74 ± 3

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test PU Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238	Plutonium 239/240
Preparation batch 7095-118						
R408104-01			7065-001	B197F0	209	21400
R408104-02			7065-002	LCS (QC ID=48690)	ok	ok
R408104-03			7065-003	BLK (QC ID=48691)	2.13 U	6.38 U
R408104-04			7065-004	Duplicate (R408104-01)	ok	ok
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0
200 MW-1 Characterization Sampling						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 5.0 %		Reference Lab Notebook 7095 pg. 118											
R408104-01			B197F0	150	0.0010			70	102				50	09/09/04	09/09	SS-035
R408104-02			LCS (QC ID=48690)	150	0.0010			65	103					09/09/04	09/09	SS-036
R408104-03			BLK (QC ID=48691)	24	0.0010			64	994					09/09/04	09/10	SS-057
R408104-04			Duplicate (R408104-01) (QC ID=48692)	20	0.0010			73	994				51	09/09/04	09/10	SS-056
Nominal values and limits from method				1.0	0.0010			20-105	100	100			180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES			
	MDA	86	± 150
	YIELD	68	± 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test U Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOIL
ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234		2: Uranium 235		3: Uranium 238		RESULT RATIOS (%) 1÷3	2σ	2÷3	2σ
Preparation batch 7095-118														
R408104-01			7065-001	B197F0	478		35.4	U	683		70	26	5	7
R408104-02			7065-002	LCS (QC ID=48690)	ok		ok		ok					
R408104-03			7065-003	BLK (QC ID=48691)	U		U		11.8	U				
R408104-04			7065-004	Duplicate (R408104-01)	ok		-	U	ok		73	26	3	3
Nominal values and limits from method				RDLs (pCi/g)	1.0		1.0		1.0		100		4	
200 MW-1 Characterization Sampling										Averages	72		4	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 5.0 %	Reference Lab Notebook 7095 pg. 118												
R408104-01			B197F0	90	0.0010			93		148			49	09/08/04	09/08	SS-031
R408104-02			LCS (QC ID=48690)	280	0.0010			96		148				09/08/04	09/08	SS-032
R408104-03			BLK (QC ID=48691)	110	0.0010			73		148				09/08/04	09/08	SS-033
R408104-04			Duplicate (R408104-01) (QC ID=48692)	97	0.0010			88		148			49	09/08/04	09/08	SS-042
Nominal values and limits from method				1.0	0.0010			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	CP-070	Soil Dissolution, < 1.0g Aliquot, rev 5
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 0
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 140 ± 180
YIELD 88 ± 20

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test SR Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOIL
BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
Preparation batch 7095-118					
R408104-01			7065-001	B197F0	3860000
R408104-02			7065-002	LCS (QC ID=48690)	ok
R408104-03			7065-003	BLK (QC ID=48691)	U
R408104-04			7065-004	Duplicate (R408104-01)	ok
Nominal values and limits from method				RDLs (pCi/g)	1.0
200 MW-1 Characterization Sampling					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 10.0 %	Reference Lab Notebook 7095 pg. 118												
R408104-01			B197F0	1200	0.0010			85		6			45	09/04/04	09/04	GRB-220
R408104-02			LCS (QC ID=48690)	160	0.0010			83		200				09/04/04	09/04	GRB-222
R408104-03			BLK (QC ID=48691)	180	0.0010			79		200				09/04/04	09/04	GRB-223
R408104-04			Duplicate (R408104-01) (QC ID=48692)	1600	0.0010			75		5			45	09/04/04	09/04	GRB-224
Nominal values and limits from method				1.0	0.0010			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	CP-061	Determination of Moisture Content in Solid Samples rev 1
	CP-071	Soil Dissolution, > 1.0g Aliquot, rev 2
	CP-380	Strontium in Water Samples, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 780 ± 1500
YIELD 80 ± 9

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

LAB METHOD SUMMARY

TECHNETIUM 99 IN SOIL

BETA COUNTING

Test TC Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Technetium 99	
Preparation batch 7095-118						
R408104-01			7065-001	B197F0	U	
R408104-02			7065-002	LCS (QC ID=48690)	ok	
R408104-03			7065-003	BLK (QC ID=48691)	U	
R408104-04			7065-004	Duplicate (R408104-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 15
200 MW-1 Characterization Sampling

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 10.0 %	Reference Lab Notebook 7095 pg. 118												
R408104-01			B197F0	10	0.0584			73	72				50	09/01/04	09/09	GRB-218
R408104-02			LCS (QC ID=48690)	12	0.0517			80	50					09/01/04	09/04	GRB-220
R408104-03			BLK (QC ID=48691)	8.6	0.0517			68	120					09/01/04	09/04	GRB-203
R408104-04			Duplicate (R408104-01) (QC ID=48692)	13	0.0517			70	72				50	09/01/04	09/09	GRB-219
Nominal values and limits from method				15	0.0517			20-105	50				180			

PROCEDURES	REFERENCE	
		TC99_TR_SEP_LSC
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 0
	CP-008	Heavy Element Electroplating, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES			
	MDA	11	± 4.0
	YIELD	73	± 11

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test GAM Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN
GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
Preparation batch 7095-118						
R408104-01			7065-001	B197F0	14.3	63600
R408104-02			7065-002	LCS (QC ID=48690)	ok	ok
R408104-03			7065-003	BLK (QC ID=48691)	U	U
R408104-04			7065-004	Duplicate (R408104-01)	ok	ok
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.10
200 MW-1 Characterization Sampling						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 15.0 %	Reference Lab Notebook 7095 pg. 118												
R408104-01			B197F0	190	5.37					414			62	08/27/04	09/21	SP,03,00
R408104-02			LCS (QC ID=48690)	1.5	5.37					413				08/27/04	09/15	SP,03,00
R408104-03			BLK (QC ID=48691)	4.6	5.37					373				08/27/04	09/16	SP,03,00
R408104-04			Duplicate (R408104-01) (QC ID=48692)	140	5.37					460			57	08/27/04	09/16	SP,04,00
Nominal values and limits from method				0.050	25.4					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	CP-061	Determination of Moisture Content in Solid Samples rev 1
	CP-100	Ge(Li) Preparation for Commercial Samples, rev 5

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 84 ± 190
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test I Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

LAB METHOD SUMMARY

IODINE 129 IN SOIL
GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Iodine 129
Preparation batch 7095-118					
R408104-01			7065-001	B197F0	3.28 U
R408104-02			7065-002	LCS (QC ID=48690)	ok
R408104-03			7065-003	BLK (QC ID=48691)	U
R408104-04			7065-004	Duplicate (R408104-01)	- U
Nominal values and limits from method				RDLs (pCi/g)	2.0
200 MW-1 Characterization Sampling					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 10.0 %	Reference Lab Notebook 7095 pg. 118												
R408104-01			B197F0	40	0.0316			57		520			48	09/04/04	09/07	XSPEC-004
R408104-02			LCS (QC ID=48690)	45	0.0316			91		649				09/04/04	09/08	XSPEC-004
R408104-03			BLK (QC ID=48691)	25	0.0316			85		785				09/04/04	09/08	XSPEC-004
R408104-04			Duplicate (R408104-01) (QC ID=48692)	31	0.0376			67		829			48	09/04/04	09/07	XSPEC-004
Nominal values and limits from method				2.0	0.0316			20-105		300			180			

PROCEDURES	REFERENCE	
	I129_SEP_LEPS_GS	
	CP-024	Iodine-129, Sample Dissolution, rev 3
	CP-530	Iodine-129 Purification, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES			
	MDA	35	± 18
	YIELD	75	± 31

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test U_T	Matrix SOLID
SDG 7065	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

URANIUM, TOTAL IN SOIL

KINETIC PHOSPHORIMETRY (KPA)

Client Hanford	
Contract No. 630	
Contract SDG H2671	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Uranium
Preparation batch 7095-118					
R408104-01			7065-001	B197F0	1970
R408104-02			7065-002	LCS (QC ID=48690)	ok
R408104-03			7065-003	BLK (QC ID=48691)	U
R408104-04			7065-004	Duplicate (R408104-01)	ok
Nominal values and limits from method				RDLs (ug/g)	1.0
200 MW-1 Characterization Sampling					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA ug/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 9.0 %	Reference Lab Notebook 7095 pg. 118												
R408104-01			B197F0	1.8	0.0010								54	09/13/04	09/13	KPA-001
R408104-02			LCS (QC ID=48690)	1.8	0.0010									09/13/04	09/13	KPA-001
R408104-03			BLK (QC ID=48691)	0.18	0.0010									09/13/04	09/13	KPA-001
R408104-04			Duplicate (R408104-01) (QC ID=48692)	1.8	0.0010								54	09/13/04	09/13	KPA-001
Nominal values and limits from method				1.0	0.0010								180			

PROCEDURES	REFERENCE	UTOT_KPA
	CP-061	Determination of Moisture Content in Solid Samples rev 1
	CP-070	Soil Dissolution, < 1.0g Aliquot, rev 5
	CP-928	Total Uranium by Kinetic Phosphorimetry, rev 5
	CP-929	Calibration of the Kinetic Phosphorimeter, rev 6

AVERAGES ± 2 SD	MDA 1.4	± 1.6
FOR 4 SAMPLES	YIELD	±

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	09/23/04

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

Test H Matrix SOLID
SDG 7065
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN SOIL
LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. 630
Contract SDG H2671

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7095-118					
R408104-01			7065-001	B197F0	U
R408104-02			7065-002	LCS (QC ID=48690)	ok
R408104-03			7065-003	BLK (QC ID=48691)	U
R408104-04			7065-004	Duplicate (R408104-01)	- U
Nominal values and limits from method				RDLs (pCi/g)	400
200 MW-1 Characterization Sampling					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7095-118			2σ prep error 10.0 %		Reference Lab Notebook 7095 pg. 118											
R408104-01			B197F0	2.4	0.440			100		120			46	09/01/04	09/05	LSC-007
R408104-02			LCS (QC ID=48690)	2.3	0.413			100		120				09/01/04	09/05	LSC-007
R408104-03			BLK (QC ID=48691)	2.5	0.413			100		120				09/01/04	09/05	LSC-007
R408104-04			Duplicate (R408104-01) (QC ID=48692)	2.5	0.413			100		120			46	09/01/04	09/05	LSC-007
Nominal values and limits from method				400	0.413					25			180			

PROCEDURES	REFERENCE	TRITIUM_COX_LSC
	CP-251	Tritium/Carbon-14 Oxidation, rev 5

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	2.4	±	0.19
	YIELD	100	±	0

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SDG 7065
Contact Melissa C. Mannion

SAMPLE DELIVERY GROUP H2671

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

0 0 0 0 0 8 2 5

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SDG 7065
Contact Melissa C. Mannion

SAMPLE DELIVERY GROUP H2671

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

EBERLINE SERVICES/RICHMOND

SDG 7065
Contact Melissa C. Mannion

SAMPLE DELIVERY GROUP H2671

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity).

SDG 7065
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

DATA SHEET

If the MDA is blank, the ERROR is used as the limit.

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

0 0 0 0 0 2 9

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

SDG 7065
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

DATA SHEET

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

EBERLINE SERVICES/RICHMOND

SDG 7065
Contact Melissa C. Mannion

SAMPLE DELIVERY GROUP H2671

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

SDG 7065
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

SDG 7065
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP H2671

SDG 7065
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

SDG 7065
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

MATRIX SPIKE

for the recovery.

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

SDG 7065
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG H2671

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data'

METHOD SUMMARY

means no amount ADDED was specified. 'LOW' and 'HIGH' correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

SDG 7065
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

METHOD SUMMARY

* Count times are underlined if less than the nominal value specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

SDG 7065
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG H2671

METHOD SUMMARY

results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included. No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

0000039

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 09/23/04

FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-029	Page 1 of 1
Collector: Pope/Pfister/Hughes/Wiberg	Company Contact: CS Cearlock; Telephone No.: 372-9638	Project Coordinator: TRENT, SJ	Price Code: 8N; Data Turnaround: 45 Days; Air Quality: ☐
Project Designation: 200-MW-1 Characterization Sampling and Analysis - Soil	Sampling Location: 216-A-4 Crib; 18.5'-21' H2671 (7065)	SAF No.: F04-015	
Ice Chest No.: SN 12/0301003G	Field Logbook No.: HNF-N-3861; COA: 119144ES10	Method of Shipment: Federal Express	
Shipped To: EBERLINE SERVICES (Formerly TMA)	Offsite Property No.: PTR 13935	Bill of Lading/Air Bill No.: See PTR 13935	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

Tie to WSCF Rad Screen: B19620

Preservation	Cool 4C	None									
Type of Container	aG	aG									
No. of Container(s)	1	1									
Volume	120mL	60mL									
SAMPLE ANALYSIS	NO2/NO3 - 353.2; Oil & Grease - 413.1; Chromium Hex - 7196	Iodine-129; Technetium-99; Tritium - H3 plus item (1)									
Sample No.	Matrix *	Sample Date	Sample Time								
B197F0	SOIL	7/21/04	1054		+						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 7/21/04 1300	Received By/Stored In: SITE FRIDGE	Date/Time 7/21/04 1300
Relinquished By/Removed From: Site Fridge 8/11/04	Date/Time 0800	Received By/Stored In: Greg Thomas 8/11/04	Date/Time 0800
Relinquished By/Removed From: Greg Thomas 8/11/04	Date/Time 0800	Received By/Stored In: Fed Ex	Date/Time
Relinquished By/Removed From: Fed Ex 8/12/04 9:40	Date/Time	Received By/Stored In: 8/12/04 12:15	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

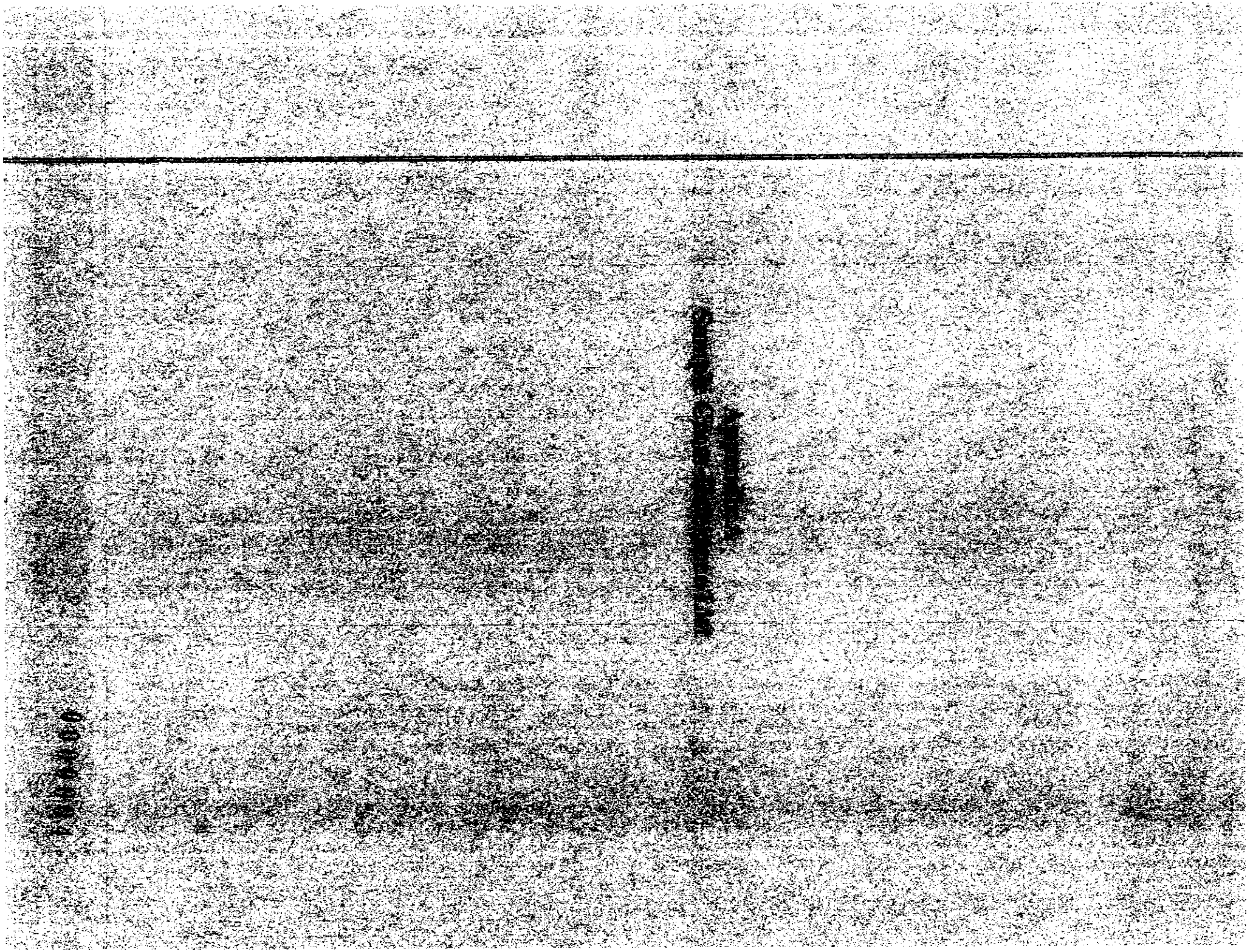
SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy & Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155; Isotopic Plutonium; Isotopic Uranium; Americium-241; Strontium-89,90 - total Sr; Total Uranium by KPA.

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time	

A-6003-618(03/03)



EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: Fluor Hanford City Richland State WA

Date/Time received 8/12/04 9:40 CoC No. F04-015-029, 040

Container I.D. No: SN 12/03/0036 Requested TAT (Days) 45 P.O. Received Yes [ ] No [ ]

INSPECTION

1.	Custody seals on shipping container intact?	Yes [Y]	No [ ]	N/A [ ]
2.	Custody seals on shipping container dated & signed?	Yes [Y]	No [ ]	N/A [ ]
3.	Custody seals on sample containers intact?	Yes [Y]	No [ ]	N/A [ ]
4.	Custody seals on sample containers dated & signed?	Yes [Y]	No [ ]	N/A [ ]
5.	Packing material is:	Wet [ ]	Dry [Y]	
6.	Number of samples in shipping container: 2	Sample Matrix Soil		
7.	Number of containers per sample: 1	(Or see CoC ____)		
8.	Samples are in correct container	Yes [Y]	No [ ]	
9.	Paperwork agrees with samples?	Yes [Y]	No [ ]	
10.	Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [Y]			
11.	Samples are: In good condition [Y] Leaking [ ] Broken Container [ ] Missing [ ]			
12.	Samples are: Preserved [ ] Not preserved [ ] pH ____ Preservative ____			
13.	Describe any anomalies: ____			
14.	Was P.M. notified of any anomalies? Yes [ ] No [ ] Date ____			
15.	Inspected by [signature] Date: 8/12/04 Time: 12:15 pm			

Customer Sample No.	cpm	mR/hr	wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. ____ Calibration date ____

Alpha Meter Ser. No. ____ Calibration date ____

Beta/Gamma Meter Ser. No. ____ Calibration date ____

Shaw™
Shaw E & I, Inc.

Geotechnical Laboratory
PO Box 4339
1570 Bear Creek Road
Oak Ridge TN 37830
865/482-6497

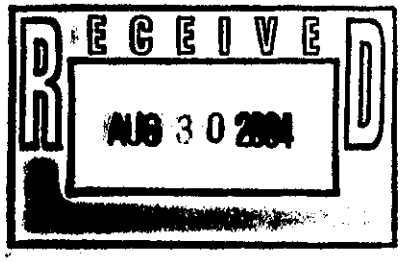
CERTIFICATE OF ANALYSIS

Stephen Trent
Fluor Hanford, Inc.
825 Jadwin Avenue
Richland, Washington 99352

August 24, 2004

This is the Certificate of Analysis for the following samples:

Shaw Project ID:	**Eberline - Hanford**
Shaw Project Number:	**100846.12000000**
Client Sampling Authorization Form No.	F04-015-040
Client Sample Data Group:	H2671
Date Received by Lab:	August 18, 2004
Number of Samples:	One (1)
Sample Type:	Soil



I. Introduction/Case Narrative

One soil sample was received by the Shaw Geotechnical Laboratory on August 18, 2004. The sample was submitted for determination of moisture content. The sample number received was B19861.

Please see Appendix A, Sample Number Cross Reference List; Appendix B, Analysis Results; and Appendix C, Chain-of-Custody/Sample Receipt Records.

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

Reviewed and Approved:

Ralph Cole
Laboratory Manager, Geotechnical Services

0000001

Shaw Geotechnical Laboratory
Oak Ridge TN
865/482-6497

II. Analytical Results/Methodology

REFERENCES: United States Army Corps of Engineers (USACE), Engineer Manual 1110-2-1906, *Laboratory Soils Testing*, appendix II, 1970; United States Environmental Protection Agency, SW846, *Test Methods for Examining Solid Waste, Physical/Chemical Methods*, 3rd ed., Nov 1986 (EPA SW-846). Annual Book of ASTM Standards, Section 4, Construction, Volume 04.08, *Soil and Rock (I)*, and Volume 04.09, *Soil and Rock (II)*, 2004. Shaw Environmental and infrastructure, Standard Operating Procedures.

Moisture Content of Soil and Rock..... **ASTM D 2216**

III. Quality Control

Quality control checks such as duplicates and spikes (QC samples), are not normally applicable to geotechnical testing. This is due largely to the inability of obtaining samples with known characteristics, the heterogenous nature of the samples, and quality control procedures built-in to the analytical method.

QC measures to ensure accuracy and precision of test results include the following:

- 100% verification of all numerical results - raw data entries, transcriptions and calculations entered by lab technicians are checked, recalculated and verified. Most data calculations are performed by computer programs.
- Data validation through test reasonableness - summaries of all test results for individual reports are reviewed to determine the overall reasonableness of data and to determine the presence of any data that may be considered outliers.
- Quality control procedures are built into most standardized geotechnical procedures. For example, liquid limit and plastic limit analyses call for re-analyses and specify acceptance criteria.
- Routine instrument calibration - instruments, gauges and equipment used in testing are calibrated on a routine basis. All instrument calibration follows ASTM or manufacturer guidelines.
- Maintenance of all past calibration records - calibration records and certification documents of all instruments, gauges and equipment are updated routinely and maintained in the Quality Control Coordinators Quality/Operations files.

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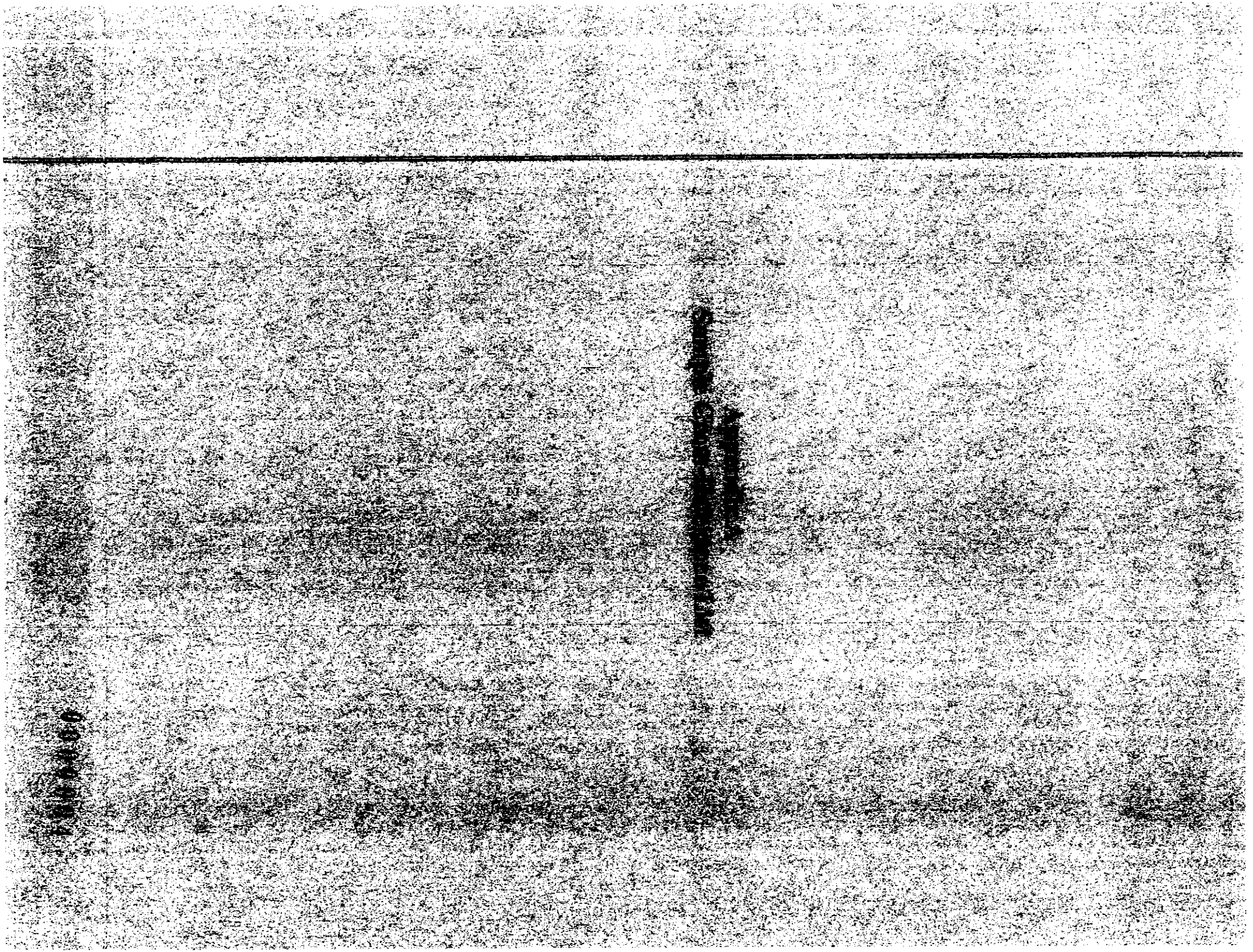
865/482-6497

- Certified and trained personnel - all technicians are certified by the National Institute for Certification of Engineering Technicians (NICET) in geotechnical soil testing, and are trained in the application of standard laboratory procedures for geotechnical analyses as well as the quality assurance measures implemented by Shaw.

- Quantitative analyses frequently used in geotechnical/physical testing programs do not use QC tools common to wet chemistry or radiochemistry laboratories. Measures not employed in the analysis of samples reported in this report include: laboratory control samples (LCS), blanks, matrix spikes (MS), duplicate analyses, dilutions, digestions, correction factors, surrogate sample analyses, detection limit determinations, control charts, and/or tentatively identified compounds (TICs).

IV. Data Qualification

None.

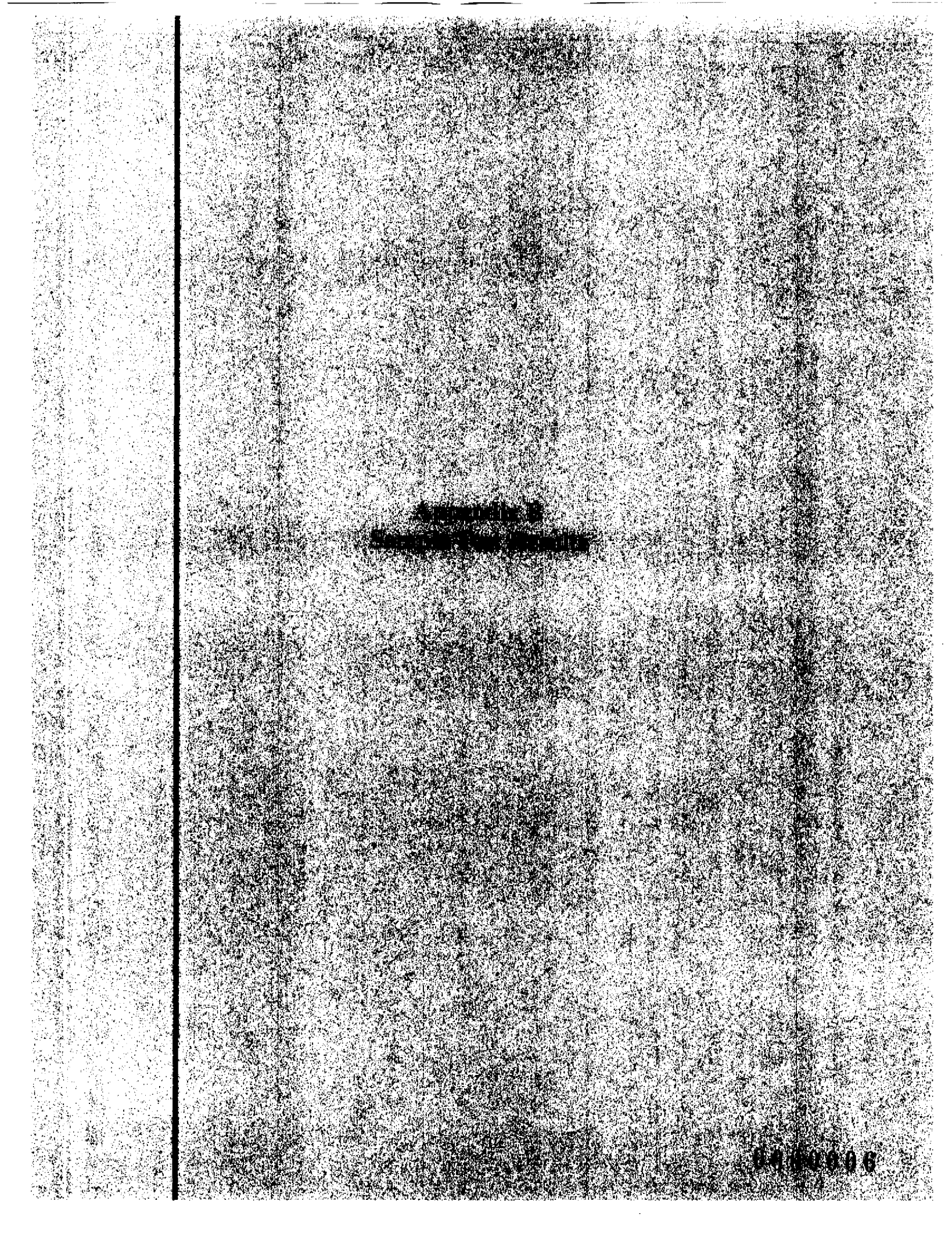


August 24, 2004
Stephen Trent
Fluor Hanford, Inc.
Shaw Project Name: Eberline Hanford
Shaw Project No. 100846.12000000
SAF No. F04-15-040
SDG No. H2671

Shaw Geotechnical Laboratory
Oak Ridge TN
865/482-6497

SAMPLE NUMBER CROSS-REFERENCE LIST

LAB SAMPLE NO.	CLIENT SAMPLE NO.	MATRIX
BC0392	B19861	Soil



August 24, 2004
Stephen Trent
Fluor Hanford, Inc.
Shaw Project Name: Eberline Hanford
Shaw Project No. 100846.12000000
SAF No. F04-15-040
SDG No. H2671

Shaw Geotechnical Laboratory
Oak Ridge TN
865/482-6497

MOISTURE CONTENT

PROJECT NAME
Eberline - Hanford

PROJECT NUMBER
100846.12000000

LAB SAMPLE NO.	CLIENT SAMPLE NO.	MOISTURE, % ASTM D 2216	MOISTURE , % SW846	SOLIDS, % SW846
BC0392	B19861	9.5	8.7	91.3

ASTM D 2216 results are based on dry sample weight.
SW846 results are based on wet sample weight.
Solids content is determined by subtracting the SW846 moisture (%) from 100.

0 0 0 0 0 0 7

Appendix C
Chain-of-Custody and [illegible] Analysis Records

FLUOR Hanford Inc.	CENTRAL PLATEAU CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	F04-015-040	Page 1 of 1
Collector Pope/Pfister/Hughes/Wiberg	Company Contact CS Cearlock Telephone No. 372-9638	Project Coordinator TRENT, SJ	Price Code 8N Data Turnaround 45 Days Air Quality ☐
Project Designation 200-MW-1 Characterization Sampling and Analysis - Soil	Sampling Location 216-A-4 Crib; 18.5'-21'	SAF No. F04-015	
Ice Chest No. 4N 12/03 0105 3#	Field Logbook No. HNF-N-3861 COA 119144ES10	Method of Shipment Federal Express	
Shipped To Shaw Group	Offsite Property No. See PTR 13935	Bill of Lading/Air Bill No. See PTR 13935	

POSSIBLE SAMPLE HAZARDS/REMARKS

N/A

Special Handling and/or Storage

Tie to WSCF Rad Screen: B19620

Preservation	None	None									
Type of Container	Moisture Resistant	Liner									
No. of Container(s)	1	1									
Volume	200g	1000g									

1/21/04 NOT AVAILABLE

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Moisture Content - D2216	Bulk Density - D2937; Particle Size (Dry Sieve) - D422						
B19861	SOIL	7/21/04	1054	✓							

BC 0392

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	7/23/04 1300	SITE FRIGS	7/23/04 1300
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Site Fridge	8/11/04 8:00	Greg Thomas & Greg Turner	8/11/2004 0800
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Greg Thomas & Greg Turner	8/11/04 0800	Fed Ex	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	8/12/04 9:40	[illegible]	8/12/04 12:15
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	8/16/04 3:00	Fed Ex.	8/16/04
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	8-18-04 @1000	[illegible]	8-18-04 @1000

SPECIAL INSTRUCTIONS

SDG # 2671

Matrix *

S=Soil
SE=Sediment
SD=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
WI=Wipe
L=Liquid
V=Vegetation
X=Other

LABORATORY SECTION	Received By	Title	Date/Time
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By	Date/Time

A-6003-618(03/03)

SDG # H2671

GE 1 Kberline Srvces CHAIN OF CUSTODY ORD # R4-08-103

08/12/04 13:37:28 WORK ID: SAF# F04-015 SDG H2671

VD: 08/12/04 DUE: 09/26/04 KEEP: 09/26/05 DISP: S

SH	SAMPLE IDENTIFICATION	STORED	TESTS
A-S	B19861	SHAW-LAB	DISPOS E333S

RELEASED BY	DATE	TRANSFERRED TO	DATE	RECEIVED BY	DATE
[signature]	8/16/04	Shaw Geo. lab		[signature]	8.18.04

BC 0392